

SECTION 22 40 00-MV

SHOWER AND LAVATORY MIXING VALVES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Shower Valves, associated trim and fittings necessary to make a complete installation from wall connections to existing piping, and certain accessories.
- B. Point of Use (POU) mixing valves for use at specific fixtures as Indicated on drawings.
- B. A complete listing of all acronyms and abbreviations are included in Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS.
- B. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- C. Section 07 92 00, JOINT SEALANTS: Sealing between fixtures and other finish surfaces.
- D. Section 08 31 13, ACCESS DOORS AND FRAMES: Flush panel access doors.
- E. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

1.3 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. The American Society of Mechanical Engineers (ASME):
 - A112.6.1M-1997 (R2012)..Supports for Off-the-Floor Plumbing Fixtures for Public Use
 - A112.19.1-2013.....Enameled Cast Iron and Enameled Steel Plumbing Fixtures
 - A112.19.2-2013.....Ceramic Plumbing Fixtures
 - A112.19.3-2008.....Stainless Steel Plumbing Fixtures
- C. American Society for Testing and Materials (ASTM):
 - A276-2013a.....Standard Specification for Stainless Steel Bars and Shapes
 - B584-2008.....Standard Specification for Copper Alloy Sand Castings for General Applications
- D. CSA Group:
 - B45.4-2008 (R2013).....Stainless Steel Plumbing Fixtures

- E. National Association of Architectural Metal Manufacturers (NAAMM):
AMP 500-2006.....Metal Finishes Manual
- F. American Society of Sanitary Engineering (ASSE):
1016-2011.....Automatic Compensating Valves for Individual
Showers and Tub/Shower Combinations
1070-2015 Point of Use Mixing Valves for individual
Fixtures (Reference Section 220523)
- G. NSF International (NSF):
14-2013.....Plastics Piping System Components and Related
Materials
- H. American with Disabilities Act (A.D.A)
- I. International Code Council (ICC):
IPC-2015.....International Plumbing Code

1.4 SUBMITTALS

- A. Submittals, including number of required copies, shall be submitted in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Information and material submitted under this section shall be marked "SUBMITTED UNDER SECTION 22 40 00, PLUMBING FIXTURES", with applicable paragraph identification.
- C. Manufacturer's Literature and Data including: Full item description and optional features and accessories. Include dimensions, weights, materials, applications, standard compliance, model numbers, size, connections, and capacity.
- D. Operating Instructions: Comply with requirements in Section 01 00 00, GENERAL REQUIREMENTS.

1.5 QUALITY ASSURANCE

- A. Bio-Based Materials: For products designated by the USDA's Bio-Preferred Program, provide products that meet or exceed USDA recommendations for bio-based content, so long as products meet all performance requirements in this specifications section. For more information regarding the product categories covered by the Bio-Preferred Program, visit <http://www.biopreferred.gov>.

1.6 AS-BUILT DOCUMENTATION

- A. Submit manufacturer's literature and data updated to include submittal review comments and any equipment substitutions.
- B. Submit operation and maintenance data updated to include submittal review comments, substitutions and construction revisions shall be in

electronic version on compact disc or DVD inserted into a three ring binder. All aspects of system operation and maintenance procedures, including piping isometrics, wiring diagrams of all circuits, a written description of system design, control logic, and sequence of operation shall be included in the operation and maintenance manual. The operations and maintenance manual shall include troubleshooting techniques and procedures for emergency situations. Notes on all special systems or devices such as damper and door closure interlocks shall be included. A List of recommended spare parts (manufacturer, model number, and quantity) shall be furnished. Information explaining any special knowledge or tools the owner will be required to employ shall be inserted into the As-Built documentation.

- C. Refer to Section 22 05 11 COMMON WORK RESULTS FOR PLUMBING, for As-Built Documentation.
- D. Certification documentation shall be provided to COR 10 working days prior to submitting the request for final inspection. The documentation shall include all test results, the names of individuals performing the testing work on this project, detailed procedures followed for all tests, and certification that all results of tests were within limits specified.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Material or equipment containing a weighted average of greater than 0.25 percent lead is prohibited in any potable water system intended for human consumption, and shall be certified in accordance with NSF 61 or NSF 372. Endpoint devices used to dispense water for drinking shall meet the requirements of NSF 61.
- B. Plastic pipe, fittings, and solvent cement shall meet NSF 14 and shall be NSF listed for the service intended.

2.2 STAINLESS STEEL

- A. Corrosion-resistant Steel (CRS):
 - 1. Plate, Sheet and Strip: CRS flat products shall conform to chemical composition requirements of any 300 series steel specified in ASTM A276. S/S trim and cover Plates shall conform to maximum, lead content, stated above
 - 2. Finish: Exposed surfaces shall have standard polish (ground and polished) equal to NAAMM finish Number 4.

B. Die-cast zinc alloy products are prohibited.

2.4 ESCUTCHEONS

- A. Heavy type, chrome plated, with set screws. Provide for piping serving plumbing fixtures and at each wall, ceiling and floor penetrations in exposed finished locations and within cabinets and millwork.
2. Compensates for pressure fluctuation maintaining flow rate specified above within 10 percent between 170 kPa and 550 kPa (25 psig and 80 psig).
 3. Operates by expansion and contraction, eliminates mineral/sediment build-up with self-cleaning action, and is capable of easy manual cleaning.

2.9 BATHTUB/SHOWER AND INDIVIDUAL SHOWER VALVES:

Thermostatic Mixing Valve ASME A112.19.1). ASSE 1016 type T/P.

Valve: Type T/P combination thermostatic and pressure balancing, wall mounted shower with chrome plated metal lever type operating handle with adjustment for rough-in variation and chrome plated brass or CRS face plate. Valve body shall be any suitable copper alloy. Internal parts shall be copper, nickel alloy, CRS, or thermoplastic material. Valve inlet and outlet shall be 15 mm (1/2 inch) IPS. Provide external screwdriver check stops and temperature limit stops. Set stops for a maximum temperature of 43.3 degrees C (110 degrees F). All exposed fasteners shall be vandal resistant. Valve shall provide a minimum of (2.5 gpm) at (45 psig) pressure drop. Meet the requirements of Shower Valves, where specified on the drawings. Shower Valve Temperature Adjustment By the Contractor. Follow Manufacturers' procedure for adjusting valves And setting temperature.

2.10 EXISTING LAVATORIES-ANTI-SCALD MIXING VALVE MV INSTALLATION:

- A. Dimensions for Existing lavatories vary, Length by width (distance from wall) and depth. Existing lavatories are both Standard and Handicapped Dimensions.
- B. Point of Use Mixing valves shall be installed at individual Lavatories where shown on the Drawings. Valves shall conform to ASSE 1070 (Latest Edition) and in accordance with the Contract Drawings and Manufacturer's recommendations. Meet the requirements of Specific manufacturer valves specified on the drawings: Contractor shall place and install Lavatory Point of Use mixing valves to accommodate existing conditions. Provide additional items as required to install valves

such as Elbow fittings, and other to accommodate existing supply piping conditions. And available space. Contractor is to provide new piping from existing stop valves to new mixing valve and from mixing valve to Lavatory Faucets.

Point of use mixing valve described herein shall be placed below the Lavatory or sink, and secured as noted on plans. Provide Valve as specified on the Contract Drawings. Temperature setting of the Valves And adjustment by the Contractor. Refer to installation Detail on Dwgs.

1. Application: Single plumbing fixture point-of-use such as sinks or lavatories. (REFER TO PLANS SHOWING WHERE VALVES ARE REQUIRED)
2. Standard: ASSE 1070.
3. Pressure Rating: 861 kPa (125 psig).
4. Type: Thermostatically controlled water mixing valve to be set at 43 degrees C (110 degrees F).
5. Connections: Threaded union, compression or soldered inlets and outlet, as indicated.
6. Upon cold water supply failure the hot water flow shall automatically be reduced to 0.2 gpm maximum.
7. Valve temperature adjustment and setting by Contractor.

2.11 TEMPERATURE ACTUATED FLOW REDUCER DEVICES (TAFR) TYPE

VALVES FOR HOT WATER TEMPERATURE LIMIT CONTROL OF PLUMBING FIXTURE DISCHARGE TEMPERATURE.

DEVICES SHALL BE CERTIFIED TO MEET UPC, IAPMO, CSA AND ASSE 1062.

(THESE DEVICES NOT REQUIRED AS PART OF THIS PROJECT)

- A. TAFR for lavatory faucet applications: Shall be equal to Cash Acme Heatguard TapSafe Valve.
HW supply temperature max 185 deg. F
Normal flow rate: Greater than 6.6 gpm.
Shut Down Flow: Less than .25 gpm.
Nominal Set temperature: 117F Plus or Minus 2 deg F.
Max operating Temperature: 145 psi.
Min operating pressure: Less than 1.5 psi
- B. TAFR (SHOWER HEAD):
American Valve Inc. 'hotstop' HSSH Shower Head.
- E. TAFR (TUB SPOUT WITH DIVERTOR):
American Valve Inc. 'hotstop' HSCP Tub Spout with diverter.
- F. TAFR (HAND SHOWER HEAD WITH HOSE):

American Valve Inc. 'hotstop' HSHH Handheld Shower.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mixing Valve: Opening between fixture/valve covers and wall finish shall be sealed as specified per mfg. recommendations, And as shown Or specified on the drawings.
- B. Supports and Fastening: Secure all items and trimmings to partitions, walls and related finish surfaces. Exposed heads of bolts and nuts in finished rooms shall be hexagonal, polished chrome plated brass with rounded tops.
- D. Toggle Bolts: Per manufacturers recommendations.
- E. Expansion Bolts: For brick or concrete or other solid masonry. Shall be 6 mm (1/4 inch) diameter bolts, and to extend at least 76 mm (3 inches) into masonry and be fitted with loose tubing or sleeves extending into masonry. Wood plugs, fiber plugs, lead or other soft metal shields are prohibited.
- F. Power Set Fasteners: May be used for concrete walls, shall be 6 mm (1/4 inch) threaded studs, and shall extend at least 32 mm (1 1/4 inches) into wall.
- G. Tightly cover and protect installed items against dirt, water and chemical or mechanical injury.
- J. If an installation is unsatisfactory to the COR, the Contractor shall correct the installation at no cost or additional time to the Government.

3.2 CLEANING, TESTS AND TEMPERATURE ADJUSTMENT SETTINGS:

- A. At completion of installation, but before walls or openings are closed. Point of use mixing valves, including Shower Mixing valves shall be Cleaned/Sterilized, and Leak Tested.
- B. Cleaning: Valves shall be cleaned by thoroughly flushing with HW and CW flows at maximum flows thru the valve. Flush valve for a minimum of 30 minutes.
- C. Leak Testing: Cap openings downstream of valve and subject valve Ports To max line pressure for two hours.

CORRECT LEGIONELLA PROBLEMS
PROJECT 598-17-105

CENTRAL ARKANSAS VETERANS HCS
SHOWER AND LAVATORY MIXING VALVES

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